West Virginia's Nonpoint Source Program
Annual Report

Fiscal Year 2003

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Mission and Goals

Nonpoint Source Program Mission Statement:

To implement dynamic and effective nonpoint source programs to enhance and preserve the physical, chemical and biological integrity of surface and groundwaters, considering nature and health, safety, recreational and economic needs of humanity, with a focus on a watershed management approach.

Nonpoint Source Management Plan 2000

The Nonpoint Source Program supports the efforts of three WV state agencies to reduce nonpoint source pollution from various land use activities; WV Department of Environmental Protection, WV Conservation Agency and the WV Division of Forestry. The base nonpoint source programs' goals are to:

- Provide technical assistance in the proper installation and maintenance of best management practices (BMPs).
- Education of the public and land users on nonpoint source issues
- Support citizen based watershed organizations
- Support enforcement of nonpoint source water quality laws
- Restoration of impaired watersheds.

The goals of these programs were spelled out in the *Nonpoint Source Program Management Plan 2000*.

The major goals for Fiscal Year (FY) 2003 were scheduled in the Program's Management Plan with objectives being determined in 2002. These major goals and objectives for FY 03 included:

- A pilot project to replace or repair failing septic systems
- Develop an urban runoff program by 2005.
- Study and expand the use of bioengineering techniques to stabilize streams.
- Implement the agricultural projects in the priority watersheds.
- Complete all projects funded by FY 99 and 01 incremental funds.
- Develop projects using FY 00,02 and 03 incremental funds to restore watersheds.

Special projects are being implemented or developed for holistic restoration of watersheds selected as priorities by West Virginia's Watershed Management Framework. These include the Cheat River, North Fork of the South Branch, Spring Creek, Upper Buckhannon River, Robinson Run, Paint Creek, Lower Elk River as well as projects for the development of watershed based plans.

Executive Summary

Program Highlights: The Nonpoint Source Program (NPSP) in FY 03 faced many challenges but continued to expand its role in TMDL implementation, watershed restoration and compliance assistance. During the year the Program increased the number of special projects, both base and incremental, from five (5) to 18. This was due in large part to the additional partnerships formed in 2002 with state and federal agencies and watershed citizen groups. These partnerships led to one of the major challenges faced by the Program, how to coordinate the bureaucracies of all the various partners. Bureaucratic delays led to a shortened construction season for several projects. An effort to streamline the bureaucratic processes is needed so project implementation is not infringed upon. The real challenge will come because many of these processes are beyond the control of NPSP staff.

The NPSP was several years behind in developing and implementing projects. This created a backlog of available funding of around $3 million. The Program had to submit more projects to EPA. A "Request for Proposal" (RFP) process was developed and used to elicit projects but the newest EPA guidelines for 319 funding forced us to pull the RFP until it can be adjusted to the new guidelines. The reviving of the Watershed Management Framework (WMF), the completion of more TMDLs and the additional resources for the Program has aided the increase in project development seen in FY 03.

New projects developed and submitted in FY 03 include:

PROJECT	319 FUNDS
2nd Upper Buckhannon	$419,329
Mudlick Refuse & AMD (Upper Buckhannon)	$90,000
1st Passive AMD Treatment in Lower Cheat	$120,853
2nd Passive AMD Treatment in Lower Cheat	$420,774
Greens Run Refuse & AMD Treatment (Cheat)	$90,000
Blaser AMD Treatment Project (Cheat)	$240,000
Long Branch of Paint Creek	$176,808
Lower Elk TMDL Implementation	$125,845
Upper Elk Aggressive Revegetation (base grant)	$107,090
Watershed Based Plan Development	$100,000

New projects developed but not submitted:

PROJECT	319 FUNDS
Morris Creek AMD Treatment	$341,060
Slab Camp Run AMD Treatment	$186,500
Inwood Wetlands	$106,800

Projects that were in some stage of implementation in FY 03:

PROJECT	319 FUNDS
North Fork of South Branch	$565,670
Spring Creek	$300,850
1st Upper Buckhannon	$400,675
Perenial Grass Buffers (Upper Buckhannon)	$130,352
Robinson Run	$80,000
1st Passive AMD Treatment in Lower Cheat	$55,000 (spent)
Greens Run Refuse & AMD Treatment	$90,000

The increased activity of the NPSP has thrust it into the forefront of TMDL implementation. Because most of West Virginia's TMDLs involve mine drainage from abandoned mine lands the Program has focused more resources on mine drainage treatment (AMD). Of the new projects developed in FY 03 66% of the funding is for AMD treatment, 30% is for agriculture and 4% is for urban runoff treatment. In comparison, the ongoing projects that were funded previously, 93% were related to agriculture and 7% was for AMD. Of all active projects in FY 03 54% were agriculture, 43% were AMD and 3% was urban. The goal for the Program is to get funding for AMD treatment around 50%.

Beginning in 2002 the NPSP began focusing a larger percentage of its resources on the treatment of AMD from abandoned mine lands. This emphasis began with the multi-agency effort to treat AMD and restore the lower Cheat River watershed. The Friends of the Cheat (FOC) River of Promise Committee (ROP) coordinate this massive effort. During FY 2003 the Program sponsored four completed projects, has one ready for construction and submitted another four for approval. The Program's partners for these projects include the National Mine Lands Reclamation Center (NMLRC), the Abandoned Mine Lands Program (AML), the U.S. Office of Surface Mining (OSM) and the FOC. The completed projects included the Middle Fork of Greens Run, two projects on the North Fork of Greens Run and the Sovern Run Site #62 project. Construction on the Blaser Project on Pringle Run has begun and will be completed in the Spring of 2004. There has not been enough monitoring on any of the projects yet to have accurate measurable environmental results. Monitoring will be conducted in the Spring of 2004 to acquire those results.

The Farm Bill programs have taken on a greater role in agricultural projects and EPA 319 Guidance has called for the 319 Program to take a supportive role in agricultural projects. But, while the Farm Bill programs have gained more notoriety, 319 funds are still considered vital for best management practice (BMP) implementation by project managers. Agricultural projects in the North Fork of the South Branch of the Potomac (North Fork) and Spring Creek have increased the number of BMPs in those watersheds. Meanwhile farmer

acceptance and activity has increased significantly in the 1st Upper Buckhannon project, which should get underway with installing practices in 2004.

ESTIMATED ANNUAL LOAD REDUCTIONS FROM INCREMENTAL PROJECTS

PROJECT	LOAD REDUCTIONS ESTIMATES		
	Nitrogen lbs/yr	Phosphorus lbs/yr	Sediment tons/yr
North Fork	1,122,000	1,364,000	NE
Spring Creek	211,000	65,000	6822
Robinson Run	1397	508	NE
Totals	1,334,397	1,429,508	6,822

NE = Not estimated

The base grant components of the Program have made significant progress in 2003. The accomplishments of the various components are detailed in the *Major Accomplishments* section. The WV Department of Environmental Protection (WVDEP) and the WV Conservation Agency (WVCA) worked closely together to make a transition of some Program activities to Phase II permitted activities. The role of the NPSP in construction and urban runoff is now education, training, technical assistance and sediment control plans for construction sites less than one acre. In FY 03 the Program in DWWM developed and began distributing a series of educational items on urban runoff issues. These included a booklet, a brochure, a power point presentation and tablemats for restaurants that feature games and education for children. Another outreach tool for local homeowners made available by the Program was a brochure called *Streamside Buffers for Your Backyard* that explains the benefits of a backyard buffer and provides a list of native species appropriate for a buffer.

The WVCA's Natural Stream Specialist is a crucial element in the NPS program. During FY 03 the stream restoration projects already highlighted and other non-319 funded projects, resulted in an estimated sediment load reduction of 5880 tons/year. The Division of Forestry's (DOF) Water Quality Program addresses training and education, cooperative efforts with associated governmental agencies and monitoring of timber harvesting through licensing, certification, job notification and posting. Sixty-seven workshops were held across the state training 1,213 loggers as to the best management practices for controlling soil erosion and water siltation from logging operations. The NPSP in WVDEP's Office of Oil and Gas (OOG) focuses on education and outreach as a means of achieving compliance with BMPs for this industry. During FY 03 OOG conducted 49 workshops or other public demonstrations educating 1423 people on BMPs.

Policy Challenges: The federal priority system that directs the AML Program has made it difficult to acquire the substantial funds available to that program for water quality treatment. West Virginia has many abandoned mine sites where AML restored the land in compliance with public health and safety priorities but did not address water quality issues. Many of these restored refuse piles, high walls and mine portals still discharge or leach out highly acidic, metal laden water. Water quality needs to be given greater consideration for the publics' health and quality of life.

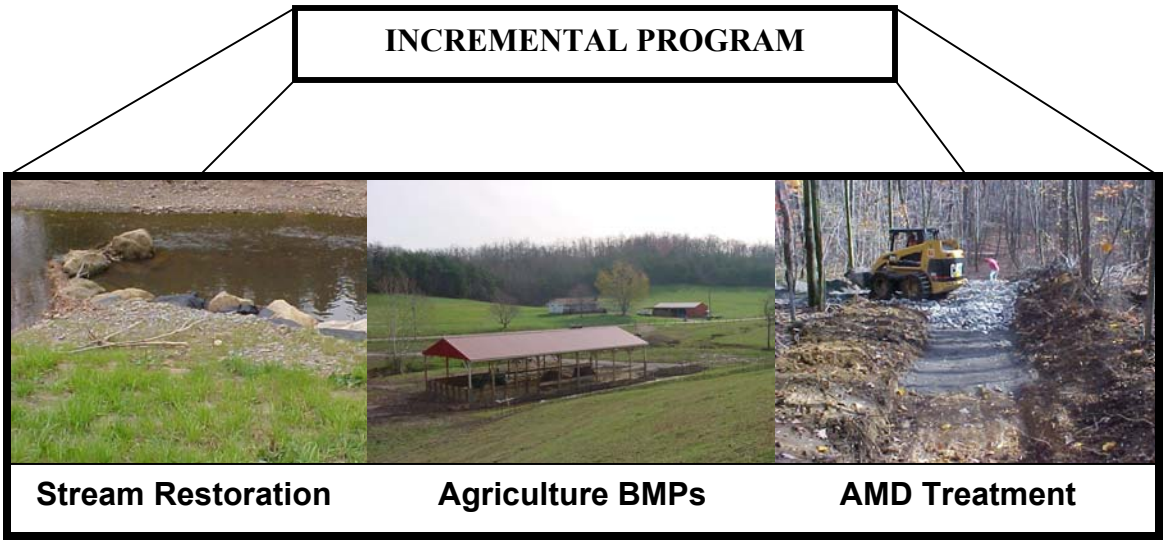
Concern has been expressed about a diminishing role for 319 funds in agricultural projects. The Farm Bill has not resulted in the amount of funding some agricultural managers expected. To stay a viable force in agricultural issues the NPSP needs to remain an active implementer of BMP projects. To relegate 319 funds to producing watershed planning documents will only reduce its importance in agricultural related projects. Most conservation farmer assistance programs do not require a watershed based plan (WBP) to be implemented. So, meshing the federal Farm Bill programs the NPSP activities will be a challenge.

The requirement of a WBP for any 319 incremental projects was a major stumbling block for the development and implementation of NPSP projects. The priority watersheds with active NPSP projects that will require more funding in the future already had multiple planning documents to guide the effort including WRASs and TMDLs. To receive further funding future proposals must wait until a WBP is developed. In newly selected priority watersheds this is not such a problem since the process starts with the development of the WBP. But, the WBP requirement is forcing the NPSP to focus on smaller less complicated watersheds. The pre-funding requirement of a WBP is placing a burden on the NPSP and its partners before funding is available. Especially in acquiring sufficient data and cost estimates. The guidance that the plan must cover all issues and lead to complete success before any funding is available prompted one partner to say to us "You guys need to be careful that in trying to make *everything* perfect you fail to make *anything* good."

Members of AML and CVI train volunteers of the Guardians of the West Fork Watershed in taking stream flows.

The Program did submit its first WBP for Lamberts Run of the West Fork River. The plan was primarily produced by the Guardians of the West Fork Association with guidance and assistance from WVDEP NPSP. The plan was received favorably by EPA and should serve as a prototype for future plan development.

Areas to Improve: The Program needs to build upon the Lamberts Run WBP to develop the expertise and resources necessary to do this type of comprehensive planning. This involves building up the capability of the Program to do its own monitoring and training to improve the technical expertise of the Program's staff. A proposed combination of the WMF and the NPSP is being considered. This would make the staff positions from these two programs into regional basin coordinators to give a more localized approach to watershed management. Each coordinator would also have a specific area of expertise such as AMD, agriculture, volunteer monitoring, etc. This would give a more effective approach to the process of plan development to implementation while also improving the technical expertise of the Program.



Program Overview

West Virginia topography is generally steep hillsides and narrow valleys with soils of sandy loam or clay. This makes hillside erosion and stream sediment deposition serious concerns in the state. The West Virginia economy has traditionally been heavily dependent on extractive industries such as mining, logging and oil and gas in the central part of the state. In the eastern and western regions agriculture plays a major role. Development has increased through out the state but is causing serious problems in suburban areas and popular vacation areas. All these activities contribute to what is widely considered the number one nonpoint source pollutant of streams; sediment.

In agricultural watersheds runoff with animal wastes can add significant amounts of nutrients and bacteria to the streams. Topography, once again, makes these reductions a challenge. Steep pastures facilitate rapid runoff with enough velocity to quickly carry wastes to the stream. The narrow valleys limit the amount of space any farmer can afford to use for filtration of runoff. Nutrient and bacterial nonpoint source pollution, through out the state, is also due to inadequate residential wastewater treatment. Treating residential sewage is a huge problem especially in older and rural communities. Failing septic systems and straight pipe disposal poses public health risks as well as water quality problems.

One legacy of over one hundred years of coal mining is acid mine drainage (AMD) from abandoned mine lands. AMD is responsible for 488 West Virginia streams being placed on the 303(d) list. Metals and low pH cause the impairment to stream life but treatment of AMD is an expensive and long-term commitment. In some watersheds impairments from metals is due to sediment from runoff as is the Lower Elk River watershed. In some of the state's most pristine headwater streams suspected acid deposition has caused 60 streams to be placed on the 303(d) list.

Changing land use as farms and forest lands are converted to housing developments, malls, logging jobs and valley fill mines exceeds the capability to restore watersheds impaired by such activities. Some preliminary studies have shown that sedimentation from various land use activities do contribute to flooding and the state has suffered some devastating floods in recent years. A greater capacity and political will to prevent the damage as the land is being converted is needed. Usually the first and often the most devastating aspect of changing land use are the roads carved into the steep hillsides. The TMDLs developed for streams impaired by sediment often designate roads from various land uses as the primary source of sediment that needs to be addressed.

The task of the Nonpoint Source Program is to, through voluntary cooperation and financial support, reduce the impacts of runoff pollution due to land use activities on the state's waters. This is accomplished through cooperative working partnerships that support the promotion, planning and implementation of BMPs and other corrective actions.

The West Virginia Department of Environmental Protection (DEP) Division of Water and Waste Management (DWWM) is the designated lead agency in the state for the Nonpoint Source Program (NPSP). As such it is responsible for the administration of the program and reporting requirements including the Grant Reporting Tracking System (GRTS). The management of Program components is managed through the DWWM Program staff to ensure a consistent statewide effort. The Program partners with the Watershed Assessment Branch of DWWM for monitoring and TMDL development.

The West Virginia Conservation Agency (WVCA) is the lead agency for the construction and agriculture components for the Program. The agriculture component of the nonpoint source program partnership consists of the West Virginia Conservation Agency, USDA Natural Resources Conservation Service, and the 14 Conservation Districts. The construction component of the nonpoint source program provides technical assistance and education to landowners, contractors, developers, and local governments in West Virginia.

The West Virginia Division of Forestry (DOF) is the lead management agency for implementation of the silviculture nonpoint source pollution programs. The Division's Water Quality Program addresses training and education, cooperative efforts with associated governmental agencies and monitoring of timber harvesting through licensing, certification, job notification and posting.

In 2002 the DEP's Office of Oil and Gas (OOG) was added as a partner in the Program. The role of the Program in OOG is the promotion of proper best management practice design and installation on oil and gas drilling sites and access roads. Much of OOG's Program activities are directed towards priority watersheds.

The DWWM NPS Program works cooperatively with DEP's Environmental Enforcement Section (EE) by providing compliance assistance for complaints concerning nonpoint sources and financially supporting nonpoint source enforcement. This is done through reporting complaints and acting as a liaison between EE and technical advisory agencies to achieve compliance.

Major Accomplishments for FY 2003

The activities of the Nonpoint Source Program are directed to achieve the goals set in the *Nonpoint Source Management Plan 2000*. The Program goals are tied directly to the TMDL Program and the priorities set by the Watershed Management Framework (WMF). However there is a need for flexibility in the Program in order to take advantage of opportunities, avoid potential missteps and to adjust to changing circumstances. Over the past year and a half there have been major personnel and organizational changes in West Virginia's program. Program components in a DWWM, WVCA and DOF have all gone through changes. The biosolids, hydromodification and construction sites between one and three acres program components have all been removed from the Program and made permitted activities. Despite these changes the Program has made major strides in accomplishing the goals set forth in the Plan to be accomplished by 2005.

Major Management Plan Goals for 2005

- ✓ Complete the assessment phase of the WMF.
- ✓ Develop urban runoff education program and demonstration projects.
- ✓ Develop 2 to 5 watershed management plans per year.
- ✓ Develop a pilot project for failing on-site wastewater treatment systems.
- ✓ Statewide load reductions: 3,000,000 lbs of N, 6,000,000 lbs of P, 200,000 tons of sediment.
- ✓ South Branch reductions: 11,600,000 lbs of N, 8,200,000 lbs of P.
- ✓ Expand the use of bioengineering techniques for stream bank restoration.
- ✓ Improve compliance to Logging Sediment Control Act by 5%.
- ✓ Increase acres in Upper Elk in the Forest Stewardship Program
- ✓ Develop a viable program for oil and gas extraction activities.
- ✓ Restore 12.9 miles of the lower Cheat River from AMD.
- ✓ Restore 59.5 miles of Paint Creek from AMD.

Watershed Management Framework: The NPSP functions as a part of the WMF process to protect and enhance the quality of the state's water resources. The WMF Committee selects the priority watersheds and facilitates the inclusion of all involved parties. Local project teams are set up by the committee for the purpose of project development to restore water quality to appropriate standards. The WMF process has completed its first five year cycle of assessment and prioritization and is now going through the cycle again. TMDL development has also completed one cycle and is partially through its second cycle.

The result is that all priority watersheds have or will soon have TMDLs

developed but not all TMDL watersheds have been selected as priorities. The amount of work needing to be done exceeded the personnel resources of the Program and all its land use components. This created a project deficiency that left $3,210,726 of 319 incremental funds unallocated over a five year period. A new goal for the Program staff came about because of this, to find or develop more project proposals. In order to accomplish this the Program sought out project opportunities including in watersheds that were not selected as priorities by the WMF. The result was the development of 15 new projects with four in nonpriority watersheds and four for research, planning and implementation, for a total of $2,532,664 allocated. New partnerships with other agencies and watershed groups made this accomplishment possible.

Urban Runoff: During FY 03 the DWWM published and began distributing a booklet entitled *From Problems to Solutions; An Introduction to Urban/Suburban Stormwater Runoff Issues in West Virginia.* This booklet was the first outreach effort to raise awareness of runoff from developed areas by the Program. To supplement this as part of an urban runoff program DWWM hired a summer intern to develop more educational materials. A brochure and a power point presentation were the primary goals accomplished but in addition bookmarks and restaurant tablemats were also developed. The tablemats are being offered as a partnership project between the Program and local watershed associations. The Program will print the tablemats with the watershed association's name and logo if they will distribute them to local restaurants. The tablemats contain games and educational information for children about urban runoff and nonpoint source pollution.

The first 319 supported urban related project in West Virginia was developed and will soon be submitted. The Inwood Stormwater Management Project was proposed by a team of federal, state and local agencies seeking a solution to the increase in flooding and runoff pollution occurring in the Inwood watershed. The town of Inwood and its watershed is not a watershed in the traditional sense it has no outlet stream. Drainage goes into a basin where it seeps into the groundwater through the ground and sinkholes. Polluted runoff from the interstate highway, housing developments, and farms contaminates groundwater in this karst region. The problem is compounded by the fact that runoff pools in the basin cause the failure of septic systems. This project will treat runoff that will be channeled to a nearby stream through a constructed wetland. This project will be submitted to EPA in 2004.

Other efforts to develop an urban runoff demonstration project are still in preliminary planning phases but problems are occurring in trying to get them to be acceptable under new EPA guidelines. One potential project, like Inwood also in the rapidly developing Berkeley County, must wait until the TMDL is developed with monitoring to begin in 2004, and the TMDL due in 2006. Another potential project is also running into difficulties matching guidelines. Briscoe Run in Parkersburg is part of the direct Ohio drains. The TMDL for the Ohio involves

PCBs and dioxin stored in the sediments. No urban project the Program undertakes will solve that problem. Since it is a highly urbanized watershed the problems are many and complicated making the development of a watershed based plan capable of solving all these problems very difficult. Local citizens are interested in partnering with the Program for a project but it is unlikely any proposal will be able to comply with all the guidelines for an incremental project and the availability of base funds is also not likely.

Watershed Based Plans: The requirement for Watershed Based Plans (WBPs) for all incremental projects is presenting some special challenges to project development and implementation. To find a solution to that challenge the Program has submitted a proposal to support the development of such plans through a partnership with local citizen watershed associations. That proposal has been approved by EPA but as yet has not been funded. However one group working with WVDEP AML and DWWM decided they wanted to proceed anyway. The Guardians of the West Fork working with the AML Program, the Nonpoint Source Program in DWWM, an OSM intern and the Canaan Valley Institute (CVI) conducted monitoring, site evaluation, landowner contacts and source tracking to develop West Virginia's first WBP. Their project watershed is Lamberts Run, it is not a WMF priority but has advantages as the first attempt to develop a WBP. It is a small watershed with one nonpoint source problem, AMD. The WBP has been submitted with favorable reviews. Due to their extraordinary efforts to develop the partnerships, data and the plan the Guardians of the West Fork won the Nonpoint Source Award at this year's Watershed Celebration Day.

Onsite Wastewater Treatment Systems: Failing septic systems and straight pipes are one of the most serious forms of pollution to the state's waterways. This is especially true for many communities built in the floodplain far from any sewage plant. One of the Program's goals in the Management Plan was to develop a pilot project for the repair or replacement of failing septic systems. Several efforts were made toward that goal. In the base grant proposal for FY 04 funding was included to support the Bureau of Public Health (BPH) in assessing the issue and the technology and to seek solutions to water quality impairment and public health hazards related to failing septic systems in priority watersheds. BPH will initiate development of low interest loans from the State Revolving Fund Program to assist residents in priority watersheds with repairs and replacements to failing septic systems. In order to raise awareness of the problems associated with failing septic systems and the opportunity to gain financial assistance for repairs and replacement, BPH will conduct outreach and develop informational tools. Additionally, BPH will conduct training for septic system installers, sanitarians, DEP staff and others regarding proper installation of on-site sewage systems.

In seeking solutions, different technologies will have to be tested. To that end a special demonstration project was included in the Spring Creek watershed project, the installation of an Elgen septic system. This system has an increased

Elgen septic system being installed on Vandale Fork of Spring Creek.

capability to treat sewage in sites located close to streams. The system requires a smaller drain field than conventional septic systems because of a two stage bio filtration setup (left photo). The system was installed in September 2003 and initial monitoring of the site appears promising. Within two months sample analyses indicate no apparent change in the quality of water in the stream below the site from what was sampled above the project (Appendix A9).

Agriculture: The agricultural component of the Program has seen many changes in its role over the last year. To adapt to these changes the WVCA, the lead state agency for agricultural nonpoint component, has had to remain flexible. The field staff maintains their traditional role of technical advisers to farmers on conservation techniques but more emphasis is being placed on their role as project managers of incremental projects. To enable them to fulfill this role increased training has occurred including the Rosgen method of natural stream channel design. These field staff also serves as flood damage assessment personnel after catastrophic flooding, which seems to occur a couple times a year in West Virginia.

The view from DWWM's office, the Stream Partners Program Jeep begins its journey to the Elk River in the June 2003 flood. Minutes later a FedEx truck, shown on national news broadcasts, floated by.

The agricultural program continues its close cooperation with NRCS on implementing CREP, EQIP and WHIP federal programs. Now they have become involved in the Chesapeake Bay Program. Their participation includes being a part of the stakeholder process for developing tributary strategies for the Potomac drainage. Involvement with local citizen watershed associations continues to be a priority especially in the development of watershed based plans for future projects. The Agricultural Water Quality Loan Program in WVCA works cooperatively with the State Revolving Fund Program (SRF) in providing low interest loans for agricultural conservation

practices (Appendix A7). The total loan expenditure since inception was $5,250,248 for projects in the PL534 Program, EQIP and 319 Program.

The incremental projects being managed by the nonpoint source technicians in WVCA include: the North Fork, Spring Creek, Robinson Run, Upper Buckhannon and the recently submitted Lower Elk project. For 2003 the estimated load reductions from the NPSP agricultural program were approximately 1.81 million pounds of nitrogen, 2.18 million pounds of phosphorus and 225 tons of sediment from agricultural conservation practices.

Nutrient management planning is still an important tool in reducing nutrient pollution of the streams. The WVCA's role in this important effort is to assist farmers in producing a plan that utilizes the recycling of organic nutrients at a level that aids productivity but does not impair the streams. To further this goal the WVCA seeks to increase the expertise of its nonpoint source specialists through the Nutrient Management Certification Training Program. The total number of Nutrient Management Plans developed was 50 covering 4,930 acres.

Nutrient management planning has become very important in the Potomac drainage as a part of reducing nutrients in the Chesapeake Bay where the poultry industry is prevalant. Emphasis has been on the proper recycling of poultry wastes for organic fertilizer and removing as much as possible from the watershed. The removal was accomplished through a 319 funded Poultry Litter Hotline to market the wastes as fertilizer outside the watershed. The Hotline was the primary tool to accomplish Goal 3-4-3 to export 12,000 tons of poultry wastes from the Potomac Valley by 2005. The exporting effort had problems with the expense and timing of transporting the litter. However this effort was discontinued in the summer of 2002 due to an outbreak of avian influenza in Virginia. The effort now consists of promoting the use of litter as organic nutrients by articles and other outreach efforts. In cooperation with Pilgrims Pride, the West Virginia Department of Agriculture and the WVCA, a small research and data collection project to look at the effects of feeding phytase was recently conducted. Based upon data in the manure analysis database there was an approximate 15 lb. per ton reduction in phosphorous. A small business and marketing plan is being developed.

Natural Stream Restoration Program: The WVCA's Natural Stream Specialist is a crucial element in the NPS program. During FY 03 the stream restoration projects already highlighted and other non-319 funded projects, resulted in an estimated sediment load reduction of 5880 tons/year. Due to the growing demand for technical expertise it has become necessary to expand the knowledge base with existing staff. To that end each Environmental Specialist will be sent to two levels of Natural Stream training provided by West Virginia University and the American Council of Engineering. In FY 03 the natural stream restoration specialist was involved in 7 major projects as well as serving in an advisory role for flood recovery. Three devastating floods occurred in 2003

leaving stream banks vulnerable to further erosion with the next high water. Technical assistance is provided to any landowner seeking to protect their stream bank after a flood. The Program attempts to promote natural stream restoration principles to that protection instead of riprap, dredging and other traditional remedies that often lead to more problems in the future.

Silviculture: The Division of Forestry's (DOF) Water Quality Program addresses training and education, cooperative efforts with associated governmental agencies and monitoring of timber harvesting through licensing, certification, job notification and posting. DOF received 650 complaints of logging operations and randomly checked more than 3,000 active logging operations for 2003. Approximately 80 percent of the operations were found to be in compliance with the Logging Sediment Control Act. Of the 20 percent out of compliance, 37 percent of those were due to potential water quality problems and 11 percent for actual water quality problems. For the year, 230 corrective actions were taken immediately by the operator and 631 Compliance Orders were issued. Four hundred Suspension Orders were issued in 2003 by DOF foresters. There were also 20 citations issued for criminal offenses. The DOF has conducted 3,321 complaint and compliance inspections of logging operations in 2003, and there were 3,243 operations registered with the DOF. During the last session of the West Virginia Legislature, the Logging Sediment Control Act was amended to allow DOF foresters to write citations for 4 criminal offenses.

The DOF also conducted workshops for the logger certification program, a logger must be trained and successfully pass courses in the safe conduct of timbering operations, first aid procedures and the use of silvicultural best management. Sixty-seven workshops were held across the state training 1,213 loggers as to the best management practices for controlling soil erosion and water siltation from logging operations. During the year, the Best Management Practices training module was completely revised from a slide show to a power point format, along with new photos and interactive training techniques. Also, through a cooperative agreement with forest industry representatives sponsoring the Sustainable Forestry Initiative (SFI) for certified forest landholders, a new logger training module was developed that incorporates silviculture and aesthetics into the training. The road design and reclamation modules are scheduled to be revised during the upcoming year. One class for training wood industry foresters on harvest planning and silvicultural best management practices was held with a attendance of 43 foresters.

An effort has been made during the year to work more closely with other agencies having mandates for water quality. Inspectors with the DEP Division of Oil and Gas gathered with DOF foresters for a first of its kind session to meet each other and discuss respective laws and regulations. As a spin off to the first meeting, Oil and Gas BMP regulations, as they relate to loggers, are being discussed at logger workshops and the NPSP Coordinator for Oil and Gas is scheduling appearances at the logger workshops.

With US Forest Service funding, the DOF continues with the Upper Elk Watershed project. This project is a forest resource stewardship program that will institutionalize the forest resource management conservation aspect of the watershed. The DOF will provide technical assistance, education, monitoring and workshops for landowners in the Upper Elk watershed. Also participating is WVU who has US Forest Service funding for water quality projects also on the Upper Elk River.

Oil and Gas: Much of West Virginia is part of productive oil and gas fields with thousands of wells and roads for producing this needed energy resource. These roads have been determined to be a major source of sediment pollution with reductions being called for from this source in several TMDLs. The NPSP in WVDEP's Office of Oil and Gas (OOG) focuses on education and outreach as a means of achieving compliance with BMPs for this industry. OOG also plays a major role in developing projects to reduce nonpoint source pollution from abandoned gas well roads in priority watersheds. During FY 03 OOG conducted 49 workshops or other public demonstrations educating 1423 people on BMPs. Most of these were oil and gas industry people but this number also included 47 students and teachers and five new inspectors.

Spring Creek Gas Road Restoration

Before During After

As mentioned in the Silviculture section there has been inter-agency discussions over the issue of multi-use dirt roads between OOG and DOF. In several cases in priority watersheds Program staff have uncovered a serious problem because of differing regulations covering oil and gas extraction and logging. Loggers are not held to the same standards as oil and gas companies and so some oil and gas roads have been seriously damaged by loggers leading to nonpoint source pollution events that ultimately the oil and gas company is responsible for repairing. The two agencies are negotiating to resolve this problem. This issue has reflected the difficulty in achieving a coordinated effort to restore WMF priority watersheds even among agencies that have signed the WMF agreement.

Resource Extraction: In the *Nonpoint Source Program Management Plan 2000* two AMD impacted watersheds were selected for restoration by 2005, Paint Creek and the Lower Cheat. Two of West Virginia's first TMDLs were completed in these watersheds. Due to major cooperative efforts involving state and federal agencies and local citizen watershed associations both of these watersheds are well on their way towards restoration. Paint Creek has already recovered enough to support a "Put and Take" trout fishery. One stretch of impaired water interrupts this fishery. The 319 and OSM Watershed Cooperative Agreement Program funded **Long Branch Passive AMD Treatment Project** will treat one tributary while AML will treat the other through the Set-Aside Program. Both of these efforts are complicated requiring a major coordination effort amongst the many partners in order to achieve success. Expectations are that these efforts will successfully restore nearly 80 miles of streams.

Ten Mile Fork and its tributary, Long Branch, bring high concentrations of both aluminum and iron into Paint Creek

The WMF has selected Morris Creek and Cabin Creek, both in the Upper Kanawha Watershed, as priority watersheds. Both of these watersheds have AMD problems and will be a focus of Program efforts. Other watersheds receiving Program attention are Deckers Creek and Lamberts Run. Deckers Creek has not been selected as a priority yet because it is not scheduled for selection but its close proximity to the Cheat River and its strong watershed association makes it a good candidate for projects. Morris Creek and Deckers Creek have proposals ready for 319 and AML partnership projects. Some older funds will be used for these projects but the development of WBPs is a priority to enable future funding for a continuation of the effort to restore these watersheds.

Lamberts Run AMD plume into the West Fork River

Support for citizen involvement: The West Virginia Nonpoint Source Program participates in and provides support for activities that encourage and aid volunteers and citizen organizations. That support is manifested in many ways: the WV. Save Our Streams (WVSOS) volunteer monitoring program; WV Watershed Resource Center; WV Watershed Network and active support for individual watershed associations in priority watersheds. The WV Watershed Network (WVWN) is an organization of government and non-profit groups organized to provide support for watershed associations and the Stream Partners Program. The Stream Partners Program (SPP) provides grants and assistance to watershed associations. The DWWM NPS Program Coordinator is a member of the SPP Review Committee. The WVWN is the sponsor of the annual Watershed Celebration Day that brings together watershed volunteers from across the state to network with other volunteers and receive recognition for their efforts.

WV Watershed Resource Center

The WV Watershed Resource Center (WRC) is a cooperative project conducted by the WVCA, WV Department of Education, DEP and the US Environmental Protection Agency. The main objective of this partnership is to convey education and information to watershed groups, local, state and federal agencies and other members of the general public on nonpoint source pollution in West Virginia and how to reduce its impacts. The WRC coordinates and implements a variety of nonpoint source outreach activities and is a participant in the WVWN.

Pam Russell of the WVCA Watershed Resource Center handing out information at the Contractors Expo in Charleston.

In FY 03 the WRC coordinated logistics in providing a workshop for contractors on Phase II at the Contractors Expo in Charleston. In Phase II requirements for permits on construction sites of one acre or more, down from three acres or more prior to Phase II, has reduced the construction component responsibilities of the WVCA. The need for education especially during the period of transition is critical. DEP has provided the actual education on the new permits but the WVCA and the WRC have provided support with workshop logistics, BMP education and educational materials.

The WRC plays a major role in the West Virginia Envirothon. This annual event brings teams from high schools across the state to compete in tests on environmental issues. Soils Resource Training Trunks have been established in

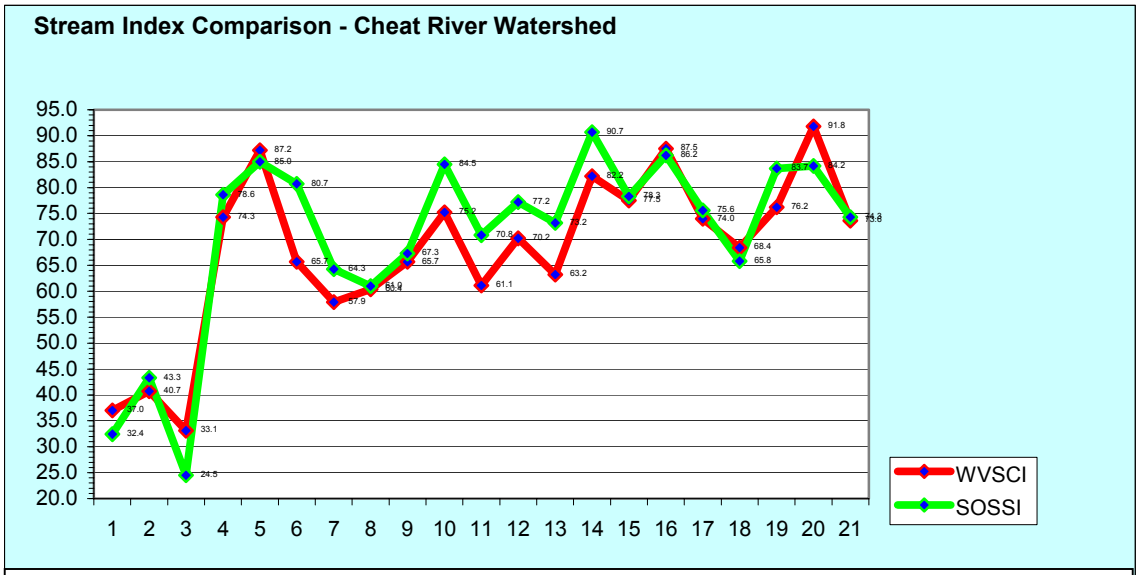
each of the 14 Conservation Districts. Teams registered for the Envirothon are eligible to check out the Soils Training Trunk from their area Conservation District. This helps students prepare for the hands-on testing style of the Envirothon competition. In 2004 West Virginia will host the national Envirothon competition.

WV Save Our Streams

The mission of WVSOS is to increase awareness, help preserve and protect existing water resources, and assist in the development of plans to restore, when necessary, the biological integrity of West Virginia's streams. The program accomplishes its mission by providing training in stream assessment and other watershed related activities to high schools, colleges and universities, volunteer organizations, citizens groups (watershed associations) etc., and by working closely with other agencies such as the WVCA as well as with other sections of the DEP.

WV Save Our Streams has spent the past year and-a-half refining its tiered approach to volunteer stream-monitoring training. The approach was developed through the input of many different stakeholder groups by holding meetings, roundtables and through the continuous feedback from support staff within DEP's Nonpoint Program and Watershed Assessment Section. WV Save Our Streams is now better suited to assist monitoring groups with watershed assessment plans that are more specific to their needs. In 2003, WV Save Our Streams was instrumental in helping several groups develop long-term monitoring goals.

Although the WV Save Our Streams did not complete as many workshops as in past years, due mainly to the wettest year on record in many parts of the



A comparison between WVSOS Level III data collected in the Cheat watershed by the Friends of the Cheat and WVSCI data collected by WVDEP.

state, the program more than made up for this by its additional outreach efforts of numerous presentations, training and other activities. Approximately 3200 individuals statewide participated in WV Save Our Streams monitoring workshops, demonstrations, presentations and related activities. The list below provides a glimpse at some of the program activities in 2003.

- 29 stream monitoring workshops – 75.9 % were either at an intermediate or advanced level.
- 149 new stream monitoring certifications, 74 re-certifications and 2 trainer certifications.
- Distributed LaMotte chemical monitoring kits and worked with the Stream Partners Program to encourage watershed associations to participate in World Monitoring Day activities
- Worked with the Kanawha Valley Chapter of Trout Unlimited to train members in all levels of stream monitoring training; the advanced level was held on World Monitoring Day in the Upper Elk River watershed
- Presented and gave workshops at the Glenville State College Environmental Fair on sediment monitoring for volunteers
- Gave presentations and workshops at the Berkeley County Science Olympiad
- Gave special presentations and workshops on wetland monitoring and assessment for a total of 8 middle schools in Kanawha and Putnam counties
- Collected information from stakeholders in the Upper Elk, so that the Nonpoint Program can make a grant application for the protection and preservation of this unique resource
- WV Save Our Streams was the first to do a thorough stream assessment on Spring Run in Grant County with support from the Friends of Spring Run Wild Trout and the WV Division of Natural Resources
- Helped the Elkhorn Creek Watershed Association assess damage and set-up a monitoring program to determine the long-term effects of a large oil/gas spill in the stream
- Worked with a Homeowners Association in Preston County to develop a local lake monitoring program

For the next year the WVSOS Program will continue to expand the role of volunteer monitoring by working with watershed associations on sediment assessments, wetland assessments, riparian assessments and chemical monitoring. The Program Coordinator will attempt to organize a multi-day training workshop to train volunteers to family level identification of macro-invertebrates. The goal will be to expand but also improve volunteer data so it may qualify for entering into STORET.

Incremental Projects: In September of this year the North Fork project was recognized as a nonpoint source program success story with a ceremony celebrating the successes so far. The North Fork has been placed on a separate "showing improvement" list in the state's 303(d) list. The river no longer violates water quality standards but has not yet achieved the TMDL reductions. This success has been achieved by a cooperative effort involving state and federal programs and local land owners. The effort will continue with emphasis on stream bank restoration projects in combination with Conservation Reserve Enhancement Program (CREP) riparian zone protection. The purpose, to reduce sediment loading caused by eroding banks due to land use, sedimentation and flooding.

The success achieved so far in the North Fork Project was celebrated at a special ceremony on September 16, 2003. The heads of the agencies involved and the watershed group pose for this picture in front of Seneca Rocks. Left to right: Don Welsh (US EPA Region III), Stephannie Timmermeyer (WVDEP), Gus Douglass (WVDA), Truman Wolfe (WVCA), Dr. Larry Cote (WVU Extension Service), Lillian Woods (NRCS), J.D. Wilkins (North Fork Watershed Association), and Mike Yokum (landowner).

The North Fork of the South Branch Project has been featured as West Virginia's nonpoint source success. The Natural Stream Restoration Demonstration Project has been completed, the riparian buffer was established and a sign highlighted the project. A second demonstration site is planned to begin in the fall of 2003. This second site will address an area in which over 3 feet of land has eroded in a three month period. This is a high priority for

decreasing the sediment load into the North Fork. The natural stream design demonstration project at Seneca Rocks was completed in September 2002 and has been a focal point for recognizing the improvement in the North Fork River. Another project, not funded by 319 but conducted by WVCA, also was completed that September. This project was near the mouth of Seneca Creek at another campground within sight of Seneca Rocks threatened by stream bank erosion from flooding. The estimated sediment load reduction from these projects is 900 tons/year.

In FY 03 804 acres were under nutrient management, 7.5 acres of trees were planted, 7800 feet of fencing, 9 alternative watering sources and 2 roofed feeding areas were installed. Estimated load reductions: 1,122,000 lbs/year of nitrogen, 1,364,000 lbs/year of phosphorus.

Other incremental projects related primarily to agricultural issues include Spring Creek, Robinson Run and Upper Buckhannon.

The Robinson Run Project addresses the agricultural concerns in this small watershed. All 8 farms that are on contract have some division fences and are addressing the need to improve their cover on their pasture. Some of these farms are utilizing Federal EQIP dollars to assist them in pasture management. One storage facility is completed and one is currently being designed and an animal waste stacking unit is under construction. Estimated load reductions from the BMPs installed so far is 1397 lbs/yr of nitrogen and 508 lbs/yr of phosphorus.

The Spring Creek Incremental 319 Project continues to address water quality concerns and make significant improvements to the Spring Creek Watershed. Contracting has resumed on the remaining funds and the project is drawing toward closure. Project contracting will conclude with contracts signed by December 31, 2003. These contracts will expire on September 30, 2008.

Two project successes, non-319 funded projects, this year include stabilizing 600 linear feet of stream bank on Golf Run, estimated erosion

Gas road restoration project

reduction of 2 ton per year, and treatment of a 13 acre critical area that will reduce erosion and sedimentation by 390 ton per year, 30 ton per acre. The critical area was a local project that was leveled and had all the vegetation removed 2 years ago. The site was never revegetated and had been significantly eroding since that time. The treatment has converted diversion ditches to rock-lined ditches and revegetated the site. Also 5 stream blockages were removed.

The gas well road restoration demonstration project was completed in September 2003 (photo above). This project restored a ½ mile retired farm, logging and gas well road visible from the road. A sign was placed at the site to advertise this watershed project.

Construction of the Spring Creek Stream Stabilization Project consisted of 2100 linear feet of streambank restoration, a 65-foot bankfull channel, three J-hooks and a cross vane to reduce near-bank stress. Approximately two weeks after construction a storm event occurred that sent water levels well above bankfull. All structures survived intact and fine material was deposited in the bankfull bench. Anticipated load reduction from this project is 350 tons of sediment.

Spring Creek Stream Stabilization Project

Before During After

The Pesticide and Well Water Surveys showed no groundwater problems as a result of pesticides, agricultural nutrients, or bacterial contamination. The Education and Outreach component is also completed with 2000 area residents and youth participating in the cooperative education and outreach effort. The

partners in this success include: the Little Kanawha Conservation District, Natural Resource Conservation Service, West Virginia Conservation Agency, West Virginia Department of Environmental Protection, West Virginia University Extension, Roane County Schools, Wirt County Schools, West Virginia Farm Bureau, West Virginia Division of Forestry, West Virginia Department of Natural Resources, and other local businesses and individuals.

The centerpiece of the project's success is the Agricultural Best Management Practices cost-share component to implement agricultural best management practices that address nonpoint source pollution. These practices have resulted in anticipated load reductions of sediment by 6,472 tons, aluminum 1,055,754 pounds, iron by 448,067 pounds, 211,000 pounds of Nitrogen and over 65,000 pounds of Phosphorus annually. These load reductions are anticipated to continue for the 15 year lifespan of the practices.

Financially the Spring Creek project has also exceeded expectations. The EPA 319 contribution of $150,100 for FY 99 has been matched by $261,000 in actual dollars from private cooperators and other non-319 sources. Also completed from this incremental project were an innovative septic system demonstration project (page 17) and a gas well road restoration project (page 21).

Beginning in 2002 the NPSP began focusing a larger percentage of its resources on the treatment of AMD from abandoned mine lands. This emphasis began with the multi-agency effort to treat AMD and restore the lower Cheat River watershed. The Friends of the Cheat (FOC) River of Promise Committee (ROP) coordinate this massive effort. During FY 2003 the Program sponsored four completed projects, has one ready for construction and submitted another four for approval. The Program's partners for these projects include the National Mine Lands Reclamation Center (NMLRC), the Abandoned Mine Lands Program (AML), the U.S. Office of Surface Mining (OSM) and the FOC. The completed projects included the Middle Fork of Greens Run, two projects on the North Fork of Greens Run and the Sovern Run Site #62 project. Construction on the Blaser Project on Pringle Run has been held up by the U.S. Army Corps of Engineers (USCOE).

The Greens Run AMD Passive Treatment Project on the Middle Fork of Greens Run was completed in October 2002. The initial post-construction sampling event was conducted on November 14, 2002. At this time, water downstream of the pit lake slag check dam was pH 10.5 and contained 41.3 mg/L of alkalinity. However flooding in November and December and a construction error that placed the elevation of the pit lake

spillway too high had inundated the system. The result was that water that had been at pH 10.5 and contained 43 mg/L of alkalinity was now pH 5.3 with 0.6 mg/L of alkalinity. The extreme high water events of the winter have caused an increase in acid and metals loadings. In deep mine situations, increased precipitation causes increased infiltration into the mines and, subsequent increase of the mine pool elevation. As the water rises in the mine, oxidized areas of the mine come into contact with water, where pyrite oxidation and hydrolysis increase acidity generation and metal liberation from the mine. Monitoring will continue to determine if the system begins to work as expected and, if not, alternative upgrades are being considered.

The North Fork of Greens Run AMD Passive Treatment Project was completed by the NMLRC in September of 2003. A limestone leach bed and 800 feet of open limestone channel (OLC) were constructed. Post construction monitoring at the site has not been conducted yet. This passive treatment system is expected to reduce acid loads by around 65 tons/year and iron by 6.5 tons/year.

The Sovern Run Site #62 Project also completed in September 2003 was an upgrade to an existing passive treatment system. At this site, steel mill slag was placed in the pool of acid mine water at the Number 62 Mine treatment system and the limestone in the OLC was renovated. Post-construction results have not been monitored yet. This project, an unconstructed system and the North Fork of Greens Run passive treatment system were all part of the 1st Passive AMD Treatment in Lower Cheat Project.

However the complicated nature of coordinating multiple agencies with different procedures and deadlines added significant delays to these projects. A landowner who had given permission for a third project site during the proposal phase had changed his mind by the time the funds became available to use. Lessons were learned from this project failure: clear communication of unique policies and deadlines for each agency and if possible seeking written permission from landowners before a site is proposed for a project. A quicker response and processing for project approval, funding and agreements from all involved agencies is also needed.

North Fork of Greens Run Refuse and AMD Treatment Project

The WVDEP's Division of Water and Waste Management (DWWM) including the NPSP and AML negotiated for a year to develop a close working relationship to develop projects to adequately treat AMD from AML project sites. Some obstacles existed to a cooperative working arrangement. For one, AML by law must follow the priority system of OSM for the selection and development of projects. In this priority system water quality is the lowest priority. Another problem is the impending expiration of the AML program in 2004 unless it is re-authorized. As of the time of the writing of this report that re-authorization of this valuable program has not occurred. There has been some criticism on a national level for spending any money on projects other than those involving public health and safety. If this view influences re-authorization then obtaining AML expertise and support for water quality projects may become more difficult in the future.

In FY 2003 319 funds have been used to support AMD treatment at the following AML project sites: the **North Fork of Greens Run Refuse and AMD Treatment Project**, the **Blaser Refuse and Portals Reclamation Project** both in the Lower Cheat and **the Mudlick Refuse and AMD Treatment Project** in the Upper Buckhannon, which has not begun. The North Fork of Greens Run Refuse and AMD Treatment Project was completed in September 2003. It included reclaiming a large refuse pile, installing three wet seals to mine portals and a 362' by 10' open limestone channel underlain with limestone fines. Monitoring for environmental results will be conducted in the Spring of 2004.

The completion and future completion of these projects in the Lower Cheat watershed brings the Program close to achieving Objective 4 of Goal 7-1 of the Management Plan: "Full implementation of AMD projects in Sovern Run and Greens Run … to restore 12.9 impaired stream miles…". Because of the Program's involvement in the ROP's Lower Cheat River Restoration Initiative other tributaries are being targeted and the goal has been expanded to the restoration of the entire Lower Cheat watershed, over 20 stream miles.

A potential connection between AMD and agricultural concerns was made during 2003 with the completion of a research project funded by 319 funds as a part of the North Fork Project. The **Remediation of High Phosphate Soils with Buffer Strips Treated with AMD Sludge Project** showed that phosphorus levels in the soil can be reduced to acceptable levels by the application of AMD sludge to the soil. More than 50 certified nutrient managers in the state were trained on the effective use of AMD floc for reducing phosphorus losses in soils that have been identified as a major source of phosphorus in the run off.

Program Concerns and Recommendations

This past year has been challenging for the Program. There has been much discussion nationally of the audit of the 319 Program by the Office of Management and Budget (OMB). The proposed OMB measures of results do not fully reflect the true impact and benefits of the Program. Policy decisions on guidance have further focused the State's program and placed additional challenges on this non-regulatory program. The goal of each watershed project is to restore it to water quality standards. This is a laudable goal, but it must be understood that it takes years to effectively restore a watershed. In most cases the public and partner agencies view success as enough improvements in water quality to establish a fishery, improve quality of life or enhance water related economic opportunities, however, OMB may not consider this a success unless the stream is removed from the 303(d) list. Once a fishery is restored, for example, the last incremental step necessary to result in that stream meeting water quality standards, may seem to be a low priority.

An example of the challenges the Program faces can be seen in the North Fork of the South Branch Project. Even though it has been hailed as a success it has yet to be officially removed from the 303(d) list, the criteria being used by OMB and EPA to judge success. There are still concerns about the health of this watershed despite its improvement and so there is reason to be cautious in issuing a final status classification of completely restored. The Program participated in this massive effort with other programs and agencies and achieved significant improvement in the watershed. This needs to be considered a major success as it stands. NPS impacts come from many diffuse sources. What is implemented today, must be maintained and properly operated in order to function as intended into the future. This requires continued follow up until behavioral changes are truly in place. In addition, some reports on this project have claimed that 80% of the farmers participate in some way, which is a high rate of participation. But, that means 20% are not participating, experience has shown that often it is this 20% who cause the most problems. Holding the 319 Program responsible implies that the state's NPSP has the authority to force participation by this 20%, for without their cooperation complete success may be impossible. The 319 funded NPSP should be held accountable only for the progress it can reasonably make with voluntary compliance. The real challenge is how to mesh enforcement and conservation assistance programs to whittle away at that 20%. In some cases only enforcement can achieve compliance. But, in many cases a lack of financial resources to provide a match to 319 is a serious problem for potential participants. Additional funding sources such as the State Revolving Fund, non-profit organizations and possibly dedicated state funds may need to be sought to provide 100% support to qualified individuals.

There are other issues that could have consequences for the entire nonpoint source effort. First, it is difficult to engage the political will to find a way to compel non-cooperative landowners and industry to do what is necessary to

improve water quality. In West Virginia there is little political support for zoning, protecting open space or riparian zones or requiring the use of BMPs. The devastating floods the state has experienced in the last few years is starting to stimulate discussion on nonpoint source issues but achieving compliance is still a major problem. Through consistent and long term education programs, WV's NPSP has made some in-roads in some counties. Continued education is key to long term success to change behavior related to nonpoint source pollution.

States are encouraged by EPA to develop a unified nonpoint source effort overseen by the 319 Program, which is held responsible for the coordinating, reporting and success of the effort with its funding potentially dependent upon the success of the effort. However, on the state level the Program is a partnership where each agency involved also has its own mission and agenda. Issues that may interfere with a consistent effort on a state level include a reluctance to participate in anything that appears regulatory and an agency mission that also promotes the activity that it must regulate to achieve nonpoint source reductions. Also, many partners have limited resources and cannot shift their priorities to focus on the priorities of the NPSP. Some state and federal agencies not affiliated with 319 but involved in nonpoint source issues often do not act in concert with the Program. A challenge to WV is to engage these partners in a voluntary program. That challenge is being answered in part by a renewed, active Watershed Management Framework (WMF).

West Virginia, through its WMF seeks a targeted approach to achieve success in restoring impaired watersheds. Maintaining a strong and functioning WMF is key to any successful effort. As more TMDLs are produced it is obvious that there are not enough resources to implement them all. The WMF is the means to target priorities and focus various resources to achieve success. It is also obvious that 319 funding cannot be the only means of implementing nonpoint source TMDLs; multiple funding sources are needed. Several related programs in WVDEP have been meshed together to combine resources. One result will be regional watershed coordinators who can focus more attention at a local level. The need for regional basin coordinators becomes obvious when trying to mesh multiple programs into a unified effort. As the Cheat River experience has shown, it is difficult to coordinate multiple funding sources and agencies into a cohesive effort. A systematic approach to mesh programs which complement each other needs to be developed.

The Program has made many adjustments to fit into the new realities of the national program. In some cases these adjustments have improved the Program, in others it has hindered what could have been worthwhile efforts. In order to comply with new Program guidelines and achieve the level of success expected by OMB, the Program will probably focus on smaller less complicated sub-watersheds. The legacy priorities such as the Cheat, North Fork and Paint Creek will be continued but the resource and funding challenges of producing a comprehensive watershed based plan will limit the number of large and

complicated efforts in the future. In some cases projects have been ongoing for several years or efforts to build partnerships or develop citizen participation have taken years. These efforts were directed under old guidelines and followed WRAS or TMDL planning documents. Requiring these watersheds to develop WBPs before more funding can be acquired has stopped the momentum that took so long to build.

Education is a key component to building support for the Program and changing behaviors that contribute to nonpoint source pollution. In 2004 the Program will help sponsor the national Envirothon. Other educational efforts need to continue and expand. This outreach and education needs to emphasize that BMPs and water quality protection or restoration does not interfere with responsible economic activities.

Future Actions

The Program follows the goals set in the Management Plan and will continue to do so. There is some indication that a revision of the Plan may be called for soon. If so, the Program will focus much effort on revising the vision for the future. Goals for 2004 include:

- Develop a project for testing solutions to solve on-site wastewater treatment problems.
- Focus more on dirt roads, restoring abandoned roads in priority watersheds, promoting BMPs for road building and resolving the issue of multi-use roads.
- Incorporate volunteer monitoring into the assessment of NPSP projects.
- Coordinate with the Phase II educational committee to target the urban runoff message to the appropriate audience.
- Complete the projects in the North Fork, Spring Creek, Robinson Run, Paint Creek and the Cheat then assess the accomplishments to set further actions.
- Implement the projects in the Upper Buckhannon, Lower Elk and Deckers Creek.
- Develop at least five WBPs.

Appendix

FY 2003 BASE PROGRAM FUNDING

Project	*319 Funding*	*State Funding*	*Total*
DEP DWWM Administration and Coordination	**$609,807**	**$406,535**	**$1,016,345**
DEP OO&G	**$75,000**	**$51,930**	**$126,930**
DOF Silviculture NPS Program	**$160,000**	**$106,668**	**$266,668**
WVCA Statewide NPS Program	**$142,189**	**$104,400**	**$246,589**
Agriculture Water Quality Loan Program	**$41,746**	**$27,913**	**$69,659**
Watershed Resource Center	**$104,545**	**$74,642**	**$179,187**
Natural Stream Design Professional	**$66,858**	**$46,000**	**$112,858**
Southern Nutrient Management	**$50,810**	**$40,400**	**$91,210**
Watershed Assistance	**$44,334**	**$30,250**	**$74,584**
NPS Western Conservation District	**$52,817**	**$36,000**	**$88,817**
Area 1 Watershed Conservationist	**$45,708**	**$30,500**	**$76,208**
Potomac Headwaters	**$54,100**	**$36,285**	**$90,385**
Area 3 Watershed Conservationist	**$49,307**	**$36,285**	**$85,592**
Area 2 Watershed Conservationist	**$48,358**	**$36,500**	**$84,858**
Totals	**$1,545,579**	**$1,064,311**	**$2,609,890**

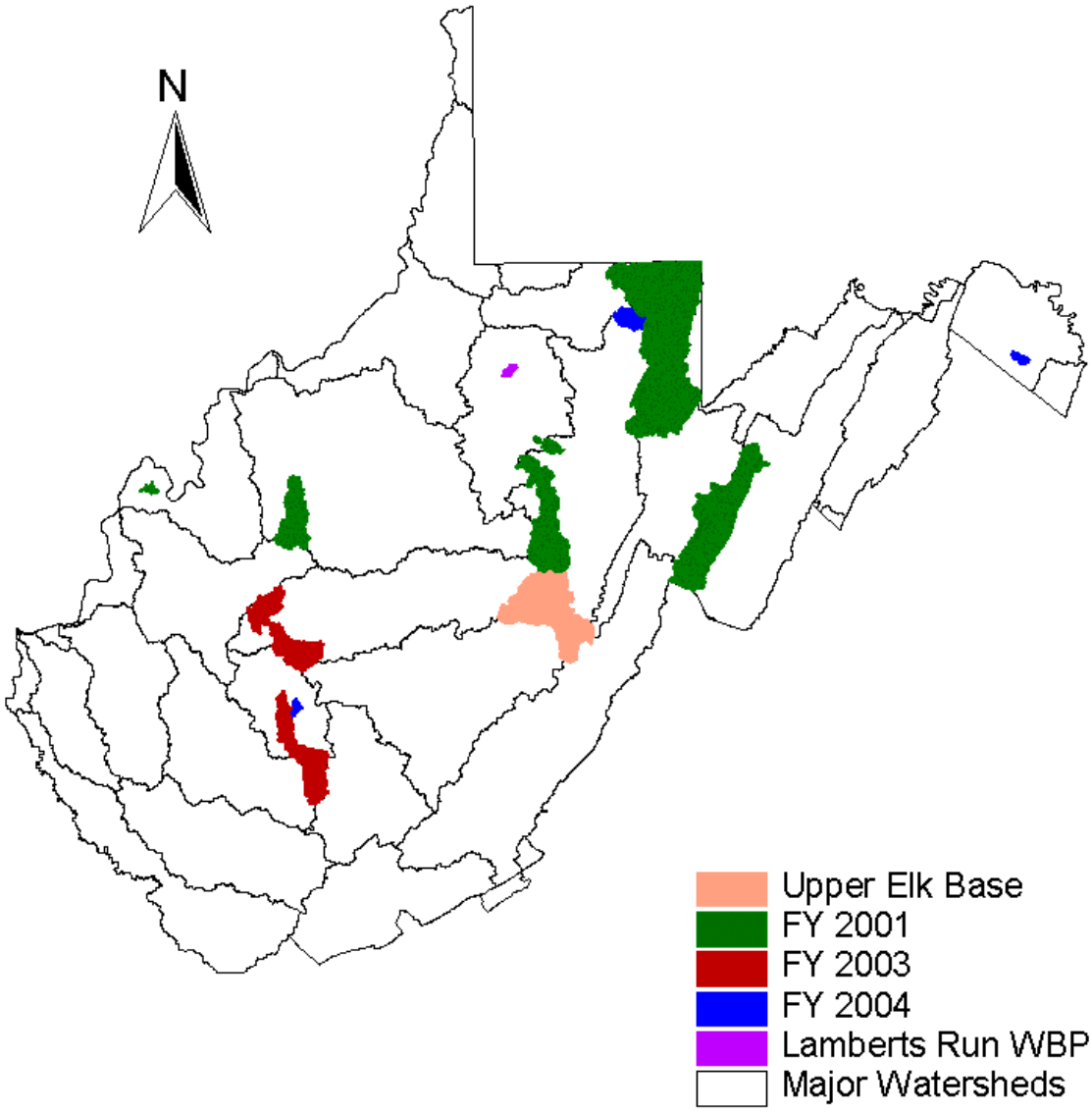
Summary of Incremental 319 Projects

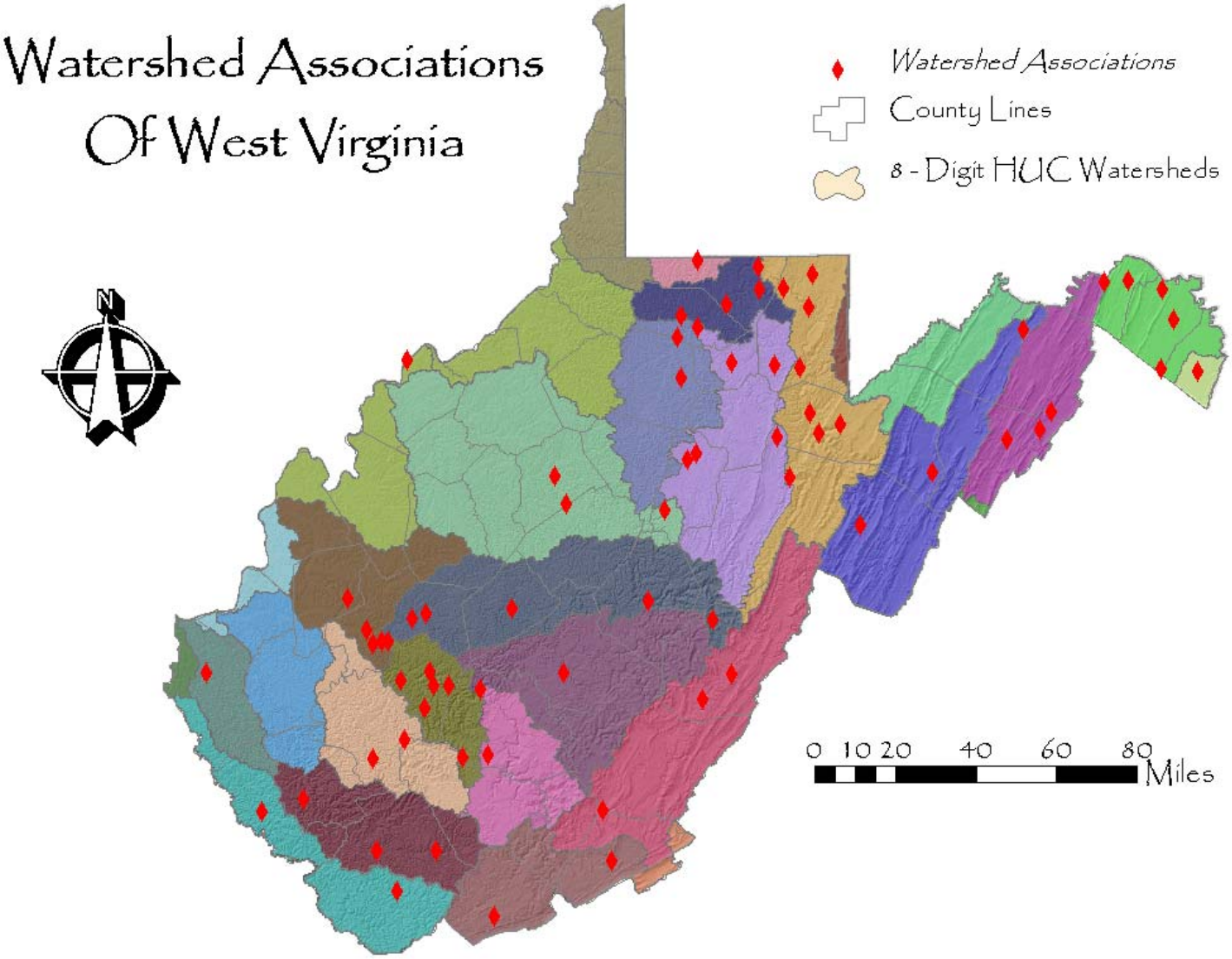
Grant Year	Project	Subject	319 Funds	State Match	Total Funds	Status
99	Johnson Knob	AMD	$70,417			Completed
99	Spring Creek	Ag, SR, septic	$155,100	$115,150	$270,250	Completed
99	Greens Run	AMD	$117,166	$76,931	$194,097	Completed
99	1st Cheat (Sovern Run)	AMD	$120,853	$119,819	$240,672	Completed
00	North Fork Sout Branch	Ag, SR, forestry	$353,670	$315,978	$669,648	Completed
00	Spring Creek	Ag, SR, septic	$150,100	$110,150	$260,250	Completed
00	WRAS (Swamp Run)	Planning	$35,697	$23,798	$59,495	Completed
00	Blaser (Sovern Run)	AMD	$240,000	$504,193	$744,193	On schedule
00	Greens Run Refuse (Johnson Knob)	AMD	$90,000	$60,000	$150,000	On schedule
00	Lower Mudlick (Johnson Knob)	AMD	$90,000	$60,000	$150,000	On schedule
00	Northern Basin Coordinator	Planning	$125,960	$83,973	$209,933	Behind schedule
01	North Fork Sout Branch	Ag, SR, forestry	$212,000	$141,350	$353,350	On schedule
01	Spring Creek	Ag, SR, septic	$150,750	$98,800	$249,550	On schedule
01	Upper Buckhannon	Ag	$400,675	$266,520	$667,195	On schedule
01	Grass Buffers	Ag	$130,352	$90,235	$220,587	Behind schedule
01	Robinson Run	Ag	$80,000	$53,334	$133,334	On schedule
01	DNA Testing	Research	$25,375	$16,917	$42,292	Completed
02	2nd Cheat River	AMD	$420,773	$280,541	$701,314	EPA
02	Long Branch	AMD	$176,807	$117,197	$294,004	EPA
02	Morris Creek	AMD	$341,060	$539,557	$880,617	DEP
02	Slab Camp	AMD	$186,500	$124,406	$310,906	DEP
02	Inwood Wetlands	Urban	$106,800	$71,200	$178,000	DEP
03	Lower Elk	Ag, SR, septic	$125,854	$114,090	$239,944	EPA
03	Upper Buckhannon	Ag	$419,329	$279,554	$698,883	EPA
03	WBPs	Planning	$100,000	$67,000	$167,000	EPA

Key

Ag = Agriculture
SR = Stream restoration
AMD = Acid mine drainage
EPA = awaitng final approval from EPA
DEP = awaiting submittal to EPA
( ) = Unintiated project where funds were originially intended

Nonpoint Source Program Special Projects

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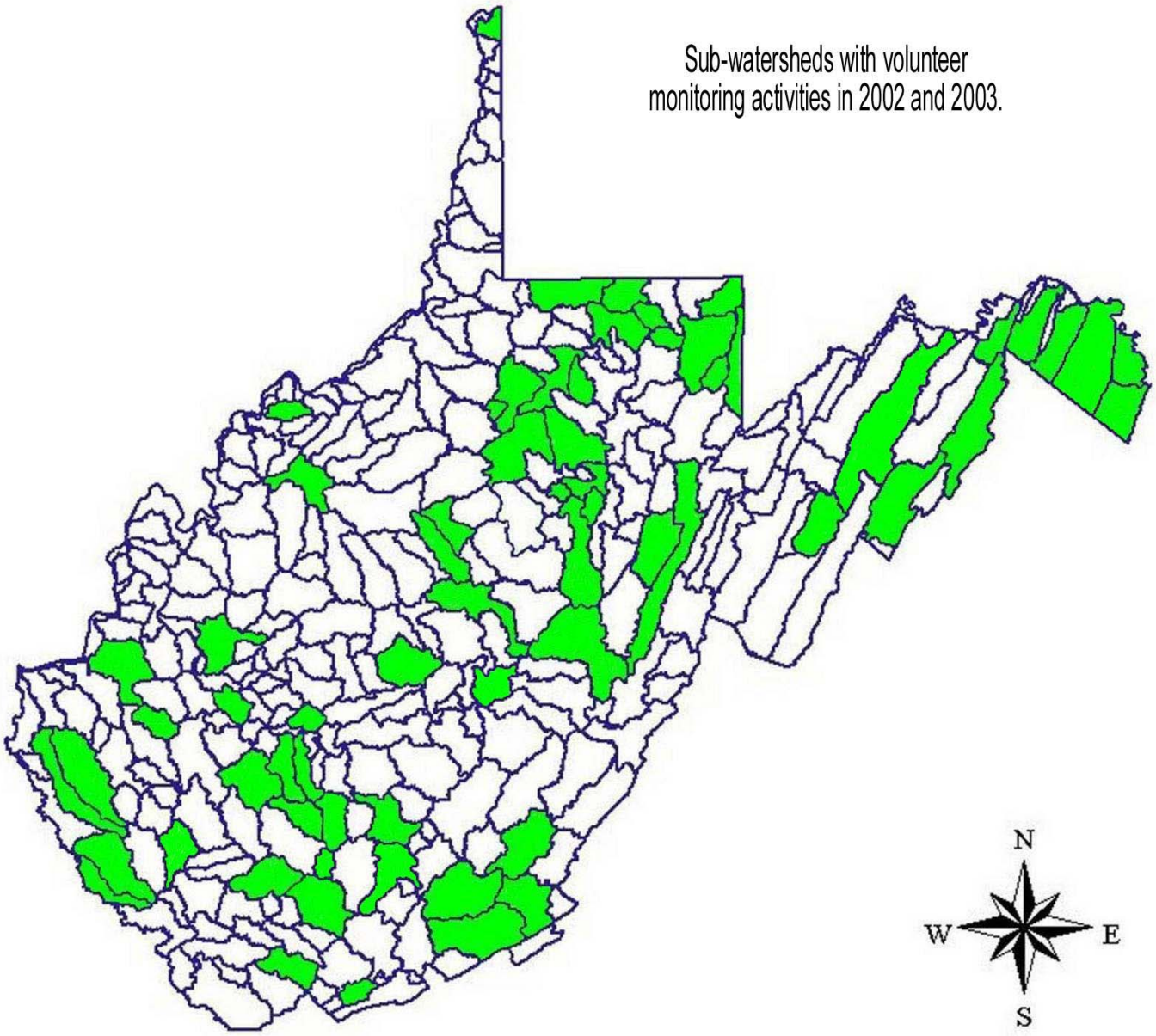
Sub-watersheds with volunteer
monitoring activities in 2002 and 2003.
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West Virginia
Agriculture Water Quality Loan Program

2003

Potomac Headwater Land Treatment Project – PL534

Number of applications received	**417**
Number of loans funded	**252**
Total loan expenditure	**$3,996,686**

Environmental Quality Incentive Program

Number of applications received	**73**
Number of loans funded	**11**
Total loan expenditure	**$1,223,864**

319 Projects

Number of applications received	**02**
Number of loans funded	**02**
Total loan expenditure	**$ 29,698**

TOTAL LOAN EXPENDITURE $5,250,248.00

NUTRIENT MANAGEMENT PLANS DATA BY AREA

Conservation District	Farmers Educated	Grassland Plans Dev	NMPs Developed	Lbs. of N&P Managed	Tons of Soil Saved	Farmers Provided Technical Assistance	Farms with Forage Analysis	Farms with Fecal Sampling	soil samples
Elk	145	13 plans, 876 acres	13 plans 876 acres	1,170.40	1752	93	16	16	45
Greenbrier	370	8 plans, 952 acres	21 plans, 724 acres	68.8	2,850	139	40	14	80
Guyan	72	6 plans, 210 acres	6 plans, 210 plans			15	8	4	25
Little Kanawha	98	5 plans, 344 acres	2 plans, 138 acres	5464	250	52	6	2	4
Potomac Valley						52	25	2	
Southern	126	140	206	14938	276	23	18	5	41
Upper Ohio	130	32 plans, 1,599 acres	31 plans, 1,581 acres	413400	100	68	11	0	14
West Fork	205	9 plans, 1612.2 acres		10800.00	1612	22	13	11	2

Lbs of nitrogen and phosphorus managed through nutrient management plans and tons of manure

Nitrogen	Phosphorous	Manure (tons)
211,433	65,056	6037.2
1,123,200	1,363,200	5,350

Lbs of nitrogen and phosphorus managed through installation of livestock feeding area BMP's

NITROGEN	PHOSPHORUS
211,433	65,056
51,000	65,778

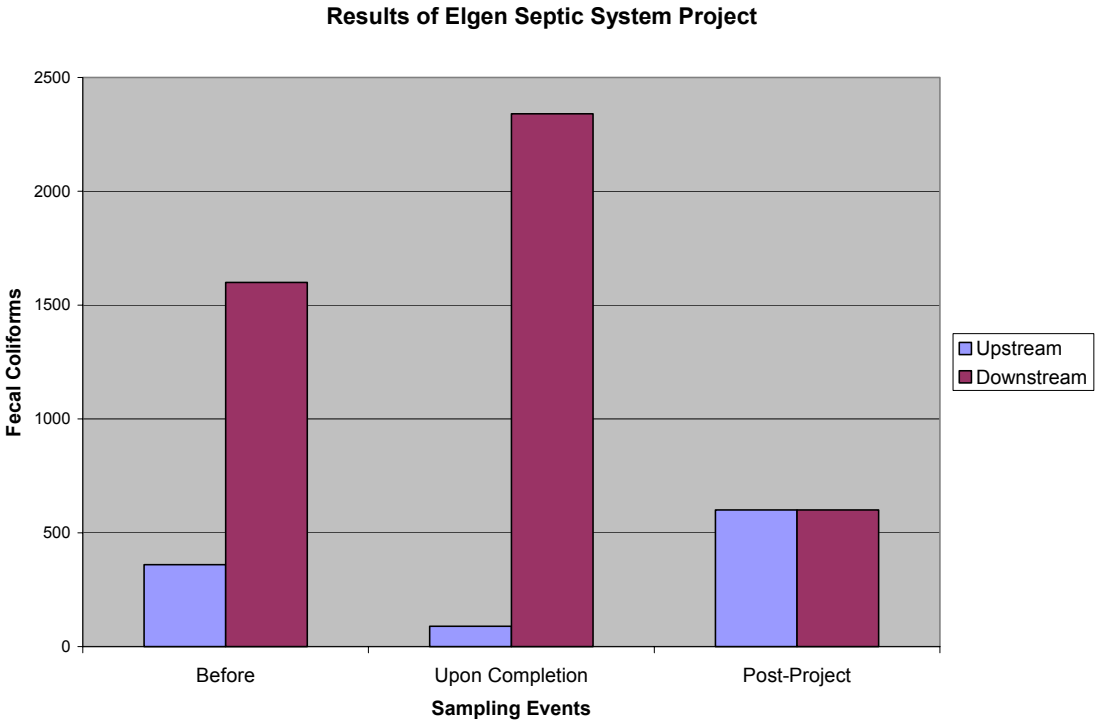
Enforcement

CAFO/AFO inspections = 8 CAFO/AFO complaint investigations = 14 CAFO/AFO site visits = 6

Stormwater inspections = 824 Stormwater complaint investigations = 960 (estimated)

Land application sites = 30

Results of Elgen Septic Demonstration Project



- The property situated adjacent to a tributary to Vandal Fork of Spring Creek was chosen based on laboratory analyses of samples collected approximately one hundred feet (100') upstream and approximately twenty five feet (25') downstream of the property.

- This tributary to Vandale Fork averages less than six feet in width and less than a foot deep which makes it very sensitive to any pollutants entering the drainage. Cattle grazing in the headwaters as well as wildlife in the area also influence the quality of the stream.

- Installation of the replacement system was conducted on 9/9/03 and 9/10/03. Pre-construction sampling showed a significant contribution from the failing septic system. Samples collected following construction (10/07/03) indicated residual contaminants and possible disturbances of contaminated soils at the site. Sampling done 1½ months after project completion (10/28/03) showed no apparent change in the quality of water in the stream below the site from above the project.

Non-Point Source Program Cooperators

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Complaints should be directed to:

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WV Department of Environmental Protection
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